



TWA/33/11

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**TECHNICAL WORKING PARTY
FOR
AGRICULTURAL CROPS**

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COMMENTS ON TGPDOCUMENTS

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1. The annex to this document presents the comments made on the following documents by the Technical Working Party on Automation and Computer Programs at its twenty-second session, held in Tsukuba, Japan, from June 14 to 17, 2004, and by the Technical Working Party for Vegetables at its thirty-eighth session, held in Seoul, Republic of Korea, from June 7 to 11, 2004.

TGP/4	Management of Variety Collections
TGP/9	Examining Distinctness
TGP/10	Examining Uniformity
TGP/10.2 Draft 3	Assessing uniformity according to the features of propagation
TGP/10.3.1 Draft 3	Statistical methods: COYU
TGP/10.3.2 Draft 3	Statistical methods: Off-types

ANNEX

General

The TWC noted that the different sections and subsections of TGP documents should be numbered in a consistent manner.	TWC
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TGP/4 Draft 1 Constitution and Management of Variety Collections

<u>General</u>	
The TWC considered that the paragraph numbering was too complicated, in particular when it contained more than four figures. It proposed that another numbering should be considered. It also considered that the term “Address” in the title of Section 1 was too vague; it agreed that it should be replaced by another word.	TWC
Several key words used in the document such as “variety collection,” “permanent collection,” “plant collection,” “working variety collection,” “temporary variety collection,” “whole collection,” “reference collection,” “perennial collection” should be clearly defined.	TWV
<u>Comments on individual sections</u>	
<p>“1.2.1 The criteria to establish the list of varieties of common knowledge must be defined in a way which limits, as far as possible, the risk of wrongly declaring a variety to be distinct ..”.</p> <p>“1.2.2 Hence, there is some risk of making a wrong decision because of the absence of a variety of common knowledge. The risk of making such a wrong decision should be as low as possible and the criteria described below are intended to help each authority to limit this risk. It is recognized that it will never be zero”.</p>	TWC
With regard to a request for clarification of the last sentence of Section 1.3.3.1, the Chairman explained that, for example, the candidate variety could be sent through international cooperation to a country where necessary reference varieties existed.	TWV

<p>“1.3.1.3 When considering varieties of common knowledge in other territories, the selection of varieties to be included in the variety collection should first consider the countries with which the UPOV member has a relationship for breeding activities, seed trade or any exchange of plant products and which have similar climatic and growing conditions”.</p> <p>“1.3.2.1 In the case of a UPOV member ...”</p> <p>“1.3.4.1 There are several ...</p> <p>(ii) Type of species: in annual species it is necessary either to store propagating material or renew it every year. In such species the whole collection is not necessarily grown every year. Instead, only those varieties ...”</p>	TWC
<p>The TWC considered that the title of Section 2.1.1 should be reworded to be consistent with the titles of the subsections.</p> <p>“2.1.1.1.2 The above list of situations should not be considered as an exhaustive or limiting list. On the contrary, it gives several possible sources of plant material for different situations and can be used as an orientation by any authority. Other situations may exist: for example, it might be possible that, apart from what is mentioned in 2.1.1.1.1 (v), the breeder could be a good source to obtain plant material of a foreign variety, especially if he has offices or a local representative in the territory of the authority requesting the material; or for some vegetative propagated varieties, apart from what is mentioned in 2.1.1.1.1 (iv), a gene bank might be the unique source of plant material”.</p> <p>“2.1.1.2.2 The verification of the identity of the plant material is a very important subject in the maintenance of a variety collection. It should be included in the routine of tests to be made on the plant material before it is introduced into the collection. An incorrect verification of the identity of the material will lead to wrong or misleading examinations of distinctness, with negative consequences for the plant breeder’s rights granted”.</p> <p>“2.1.1.2.3 For seed propagated varieties, one way of verifying the identity ... In the case of some vegetatively propagated species, or where very similar varieties have to be compared, the new material should be tested against the variety description before the removal of the old plants. In some cases, In the case of temporary variety collections (see Section 2.2.3 Management of Temporary Variety Collections) ...”</p> <p>“2.1.1.2.4 The routine tests for verifying the plant material before its introduction into the variety collection may be intended to check other features apart of the identity. Plant material is usually tested for its phytosanitary status, and when ...”</p> <p>“2.1.1.3.2 Seed is usually stored in cold chambers. It is usually cleaned and divided into subsamples and placed in special containers for final long-term storage. In general, ...”</p>	TWC

<p>“2.1.1.3.3 In [other] variety collections of trees and non-seed-propagated perennial varieties, the plants will become over-mature and will need to be replaced by rejuvenated ones ...”.</p> <p>“2.1.1.4.2 With respect to the material already ... (iii) in the case of tree and [vegetatively propagated] perennial collections, once the plant has reached the maximum plant age (see Section 4.2.1.1.3 <i>Maintenance</i>) ...”</p> <p>“2.1.2.1 The maintenance of a variety collection implies the management of different information [descriptive, administrative] stored, relating to verification of the plant material ...”</p> <p>Paragraph 2.1.2.2: subparagraph (ii) to delete the reference to “walking reference collections” and subparagraph (iv) to read:</p> <p>“(iv) a collection of digitalized images of specific parts of plants representing each variety: this solution is presently being considered within UPOV. It is an interesting way to obtain information for the grouping of varieties”.</p>	
<p>The TWC also agreed that the information related to variety collections maintained by tissue culture should be added and that paragraph 2.1.1.3.3 should be reworded to show that the examination of hybrid varieties based on its components and the formula of the hybrid is one option, but that there are other ways to examine hybrid varieties.</p>	TWC
<p>“2.2.2 <u>Management of Permanent Collections</u></p> <p>Permanent collections are those in which the perennial plants are maintained under cultivation. When planning a growing trial it is not usually possible to design a trial using new plant material every...”.</p> <p>“2.2.3 <u>Management of Temporary Variety Collections</u></p> <p>Permanent variety collections can be important resources for ... A variety collection could exist as a list and the necessary plant material be assembled when required, so establishing a temporary collection. ...”.</p> <p>“2.2.4 <u>Use for DUS Testing</u></p> <p>“2.2.4.1 When ... All are at fruiting maturity. The approach is based on a clear definition of the growth stage or level of maturity at which testing in a tree or perennial species can proceed. It overcomes the difficulty of using variety collections containing plants of different ages. This approach is particularly relevant for vegetatively propagated varieties, which examination of distinctness is often made with very little use of statistical methods”</p>	TWC

<u>General</u>	
To check the footnotes throughout the document.	TWC
<u>Comments on individual sections</u>	
<p>First paragraph of Section 2: to replace the word “means” by “methods” in the last sentence.</p> <p>Section 2.1.2: to take away the reference to paragraph 4 in the quotation from the General Introduction.</p> <p>Paragraph 2.1.3.2: the sentence that introduces the example on wheat to read: “An example for wheat is presented using the grouping characteristics from TG/3/11”.</p> <p>2.1.3.3 At the end ... “Thus, in a second growing cycle the candidate variety can be placed close to, or even next to, those varieties which are the most similar or not distinct from the candidate variety after the first growing cycle”.</p> <p>Table 1 Wheat: to be rotated to facilitate its reading.</p> <p>The TWC considered that GAIA is a methodology and not simply software. It agreed on the spelling “GAIA” instead of “GAÏA” and the following wording: “2.2.4.1 The GAIA method”.</p>	TWC
The TWC considered that the content of Section 2.2 related specifically to GAIA.	TWC
Concerning Section 2.2.2, which introduced the concept of “distinctness plus,” a question was raised whether this concept, closely related to the application of GAÏA software, could be appropriate for the testing of vegetable varieties.	TWV
The TWC proposed that the content of Sections 2.2.1 and 2.2.2 should be moved to Section 2.2.4 and that a new text explaining a more general notion of phenotypic distance should be developed.	TWC
In relation to Section 2.2.3, the TWC considered that the references to GAIA should be moved to Section 2.2.4 and that those parts of Section 2.2.3.2 which refer to similar varieties should be moved to Section 3 of document TGP/9 because they are relevant for the trial organization and not for selecting varieties for the growing trial.	TWC
“3.1.2.4 For some perennial crops, such as fruit trees, the same plants are examined over successive years. In this case, the condition of independence of growing cycles is also considered to be satisfied”.	TWC
“3.2.1.6 Some Offices use more than one location in order to obtain independent trials in a given year. This situation is still to be investigated. The current “recommendations” include that the locations should be chosen so that the variety-by-location interaction is as large as the variety-by-cycle (year) interaction in any characteristic used for distinctness”.	TWC

<p>“3.2.2.1 As described in the previous section, there are several reasons for using trials in more than one location ...</p> <p>“(b) The variety-by-year interaction and the variety-by-location interaction</p> <p>“(c) How to use the information obtained in these centers; whether it will be averaging over centers or each center would be considered individually.</p> <p>“(d) Is consistency over cycles (years) necessary between the testing places?</p> <p>“(f) To set up the standard probability and the LSD year Testing Center (Comment: it is not clear what does it mean)”.</p>	
<p>The title of Section 4 to read: “SECTION 4: FACTORS IN THE CHOICE OF METHODS FOR THE ASSESSMENT OF DISTINCTNESS”</p>	TWC
<p>“4.1.1 The appropriate ...</p> <p>... In the case of greater plant to plant variation, it is advisable to take records from individual plants and to calculate the mean expression of the variety in order to assess distinctness between varieties and to describe a variety”.</p>	TWC
<p>“4.2.1.1 In cases where there is very little variation within varieties, the determination of distinctness is usually on the basis of visual assessment, rather than by statistical methods”.</p>	TWC
<p>“4.2.2 Vegetatively propagated varieties</p> <p>See Section 4.2.1”</p>	TWC
<p>“4.2.3 Cross-pollinated varieties</p> <p>Within variety variation ... Distinctness can then be assessed by comparing the differences in variety means with a measure of random variation inherent in the variety means (see TGP/9.5.3 “Statistical Methods”)</p>	TWC
<p>“4.2.4.2.4 Assumptions of the method</p> <p>(i) A compulsory declaration ..”.</p>	TWC
<p>“4.2.4.2.6 The difference between lines must (A x C): having characteristic C1 “present” (B x C): having characteristic C1 “present””</p>	TWC
<p>“4.2.4.2.10 Such approaches have been developed on different species in France using methodologies with which ...”</p>	TWC
<p>The TWC agreed that Section 4.3 should refer to the definition of types of characteristics in the General Introduction and not to the way they are used.</p>	TWC
<p>“5.2.3.6 At the end of the “blind” testing the variety can be declared as distinct: if the expert and the breeder always identify the variety, the difference can be considered as a clear difference for that characteristic”</p>	TWC

The TWC agreed to have “blind” within inverted comas the first time the term appears in Section 5.2.3 and not the successive ones.	TWC
The TWC agreed that a chapter providing further details about “blind” testing should be developed in future.	TWC
With respect to Section 5.2.3 on the use of “blind” testing, the TWV noted different opinions on the participation of breeders in “blind” testing; it was further observed that the “blind” test should be conducted as supplement and should not be considered to be a replacement of ordinary DUS testing.	TWV
The TWC agreed to have Section 5.3.2.5 “Adapting COYD” to special situations relocated as Section 5.3.3, including in that long-term COYD, and Section 5.3.2.7 to read: “5.3.4 References for COYD” and “5.3.5 Others”	TWC
The TWC agreed that an explanation in Diagram 2 be added to explain the reason for having two options in the first box NO	TWC
The TWC agreed to move the content of Section 6 to document TGP/6. It considered that as the content of Section 6 of document TGP/9 was not presented following the structure of the document, it was difficult to establish the relation between that section and the rest of the document and thus considered it appropriate to include it in a different TGP document, and	TWC
The TWC agreed that the section “Alternative Criteria” included in Annex IV to be moved to Section 5.3.4 “Others”	TWC
<u>Comments on document TGP/9 Draft 1 Add. Examining Distinctness</u>	TWC
The TWC agreed to the proposal from the Chairman to wait for comments from the other TWPs before considering possible changes in the structure of document TGP/9	

TGP/10 Examining Uniformity

<u>General</u>	TWC
The TWC agreed to merge sections TGP/10.1 and TGP/10.2 in one single section for introduction and that the remaining sections should be renumbered accordingly. It also agreed that section TGP/10.3.3 “Segregation ratios” should be taken on to TGP/8. Finally the TWC agreed that, subject to the incorporation of the comments made by the Working Party and the above mentioned amendments a compiled version of TGP/10 could be prepared for consideration by all the TWPs during year 2005 as proposed in TC/40/5 Add.	

TGP/10.2 Draft 3 Assessing uniformity according to the features of propagation

<u>Comments on individual sections</u>	
Paragraph 3, last sentence to read: “...Thus, the uniformity of the crop may be determined by off-types alone, by variances of the characteristics alone, or by off-types for some characteristics and by standard deviations for other characteristics”.	TWC

Section 10.2.1: To add a sentence for COYU in the case of a need of the method.	TWC
Paragraph 5 (b), fifth sentence to read: “... Comparable varieties are varieties of the same type within the same or closely related species that have been previously examined and considered to be sufficient uniform”.	TWC
Title of Section 10.2.2 to read: “10.2.2 Uniformity Assessment on the Basis of Standard Deviations”	TWC
The TWC considered that the references to the assessment of uniformity by relative tolerances in paragraphs 5 (b) and 10 should be developed for the sake of clarity. It also agreed that it would like to receive information on the result and discussions about the questionnaire issued by the TWO.	TWC

TGP/10.3.1 Draft 3 Statistical methods: COYU

<u>General</u>	
The expert from the United Kingdom observed that so far the probability levels appearing in the draft were not used in Test Guidelines for vegetable species.	TWV
<u>Comments on individual sections</u>	
Paragraph 10 to read: “10. The advantages of the COYU criterion are: <ul style="list-style-type: none"> ▪ It provides a method for assessing uniformity that is largely independent of the varieties that are under test. ▪ The method combines information from several trials to form a single criterion for uniformity. ▪ Decisions based on the method are likely to be stable over time. ▪ The statistical model on which it is based reflects the main sources of variation that influence uniformity. Standards are based on the variability within varieties”.	TWC
Paragraph 11 to read: “11. COYU is recommended for use in assessing the uniformity of varieties <ul style="list-style-type: none"> • For quantitative characteristics. • When observations are made on a plant basis over two or more years. When there are some differences between plants of a variety, representing quantitative variation rather than presence of off-types”.	TWC
Paragraph 14 to read: “14. The uniformity test may be made over two or three years . If the test is normally applied over three years, it is possible to choose to make an early acceptance or rejection of a variety using an appropriate selection of probability values”.	TWC
Paragraph 23 to add “(V)” after the word “variance” at the end of the paragraph.	TWC

TGP/10.3.2 Draft 3 Statistical methods: Off-types

<u>General</u>	
The TWC agreed that the Chairman in conjunction with Mr. Roberts and the Office would issue a questionnaire to seek information about the population standards used in COYU.	TWC
The expert from France pointed out that there might be cases in the assessment of uniformity of some cross-pollinated varieties where the authority would need guidance whether the uniformity should be assessed on the basis of the number of off-types or according to the relative uniformity concept. For example, in cases where off-types occur, e.g. skin color in a cross-pollinated root crop, how these should be considered. It should be made clear whether the number of off-types should be compared with other similar varieties, or a population standard and acceptance probability should be applied as in self-pollinating species. Supplementary explanation should be provided to address such cases, for example, by introducing a procedure for a combined application of both strategies for the assessment of uniformity;	TWV
The expert from the United Kingdom pointed out that the uniformity assessment, on the basis of the relative uniformity concept, would not work if the earliest applications for protection of a crop species were very uniform. In such cases, applications which follow could be rejected for being less uniform, even if the level of uniformity was considered acceptable. The establishment of a fixed uniformity standard, say 1% or 2% of allowable off-types, might be helpful in such cases. Similarly, a maximum acceptable level could be set for continuous variation.	TWV
<u>Comments on individual sections</u>	
The TWC agreed that the first two sections of the document, namely Summary and Introduction, should be merged.	TWC
Paragraph 12: To replace the term “heterogeneous” by “nonuniform” and the same to be done throughout the whole document as far as possible.	TWC
The TWC considered that the last sentence of paragraph 54 should be expanded to note crop experts the consequences of using the smallest sample size in the range of sample sized with a given maximum number of off-types. It also considered that the definitions presented in paragraph 55 should be reconsidered jointly with the new draft of TGP/14.3.	TWC

[End of Annex and of document]